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ABSTRACT

This review of the evolution of reference services in the library of the University of Tennessee at Chattanooga begins with background information on the university and a brief description of the library's holdings and services. The mission of the library is stated, and it is noted that automation began with internal technical operations in 1983. Services provided by the reference department are then discussed, and it is pointed out that, in addition to providing the more traditional reference services, reference librarians are also responsible for an increasing number of automated reference services. These services include accessing and, in some cases, training users to access, a variety of electronic databases, including the online catalogs of other universities, online databases available from commercial vendors, and electronic databases available on optical disk. A computer search is defined as library research which is performed for an individual by a librarian using a computer, and the various databases searched and procedures for requesting a mediated search are described. Charges and policies for mediated online and CD-ROM searches are also detailed, as well as the establishment of an experimental Automated Reference Center (ARC), which offers UTC faculty members access to electronic databases on CD-ROM and a brief training program in database search techniques for end-users. The report concludes with a discussion of the consequences of the reference evolution in terms of the new roles and responsibilities being assumed by staff members, the need for in-house staff training, and policies and procedures that will need to be reviewed and revised as reference services continue to evolve. (DB)

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THE EVOLUTION OF AUTOMATED REFERENCE SERVICES AT UTC

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THE EVOLUTION OF AUTOMATED REFERENCE SERVICES AT UTC

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Since each library is unique in terms of the community it serves and the resources it has at its disposal, it should be no surprize when different libraries attempt different solutions to the similar problems of information service. This paper describes how the library of the University of Tennessee at Chattanooga (UTC) has managed over time to provide its users with a variety of automated reference services. The paper also describes many of the effects of this service evolution.

The University and the Library

In 1969 the University of Chattanooga and Chattanooga City College merged with the University of Tennessee, to form the University of Tennessee at Chattanooga (UTC). The UTC campus was given the mandate to devote the major portion of its resources to the development of excellence in undergraduate education and in selected areas of graduate study. Today, the University of Tennessee at Chattanooga employs over 275 full-time faculty members; serves approximately 6,100 undergraduate and 1,400 graduate students; and offers 107 undergraduate majors and 37 graduate majors.

The success of all academic programs at UTC is tied directly to the development of a strong library. The T. Cartter and Margaret Rawlings Lupton Library is an indispensable tool for education and research on the UTC campus, and its resources are fundamental for academic achievement in every academic discipline. The Lupton Library currently houses over 1.4 million items including books, journals, microforms, films, cassettes, and other media which support the teaching and research programs of the University of Tennessee at Chattanooga. Each week during the Fall and Spring terms, the library is open more than 92 hours and averages approximately 12,000 visitors. The library currently employs 15 full-time faculty members and 17 full-time staff members as well as approximately 40

part-time student assistants. The library offers an wide array of services to the University's students and faculty all in a single, centralized location.

Automation and the Library's Mission

The mission of the T. Cartter & Margaret Rawlings Lupton Library is to provide access to materials and information which support the teaching and research programs of the University of Tennessee at Chattanooga. The library attempts to facilitate the use of such materials and information by providing a variety of public services to the students, faculty and staff of the University. In 1983 the library began automating most of its internal technical operations (including cataloging, circulation, reserves, and serials control), as well as it's public access catalog. For most of these activities, the library employed a Hewlett-Packard minicomputer and software developed by VTLS, Inc. These early automation efforts were highly successful and user reaction was overwhelmingly positive. But, as the campus network gradually expanded and the university community became comfortable searching the library's OPAC, users began to demand access to other electronic databases. Today, the library's Reference Department is attempting to respond to these new demands with a variety of automated reference services.

The Library's Reference Department

The UTC Library Reference Department is a service-oriented unit composed of one department head, four librarians, and one secretary. These six individuals work closely with the library's Coordinator of Library Instruction and it's Coordinator of Interlibrary Loans in order to facilitate user access to information and materials located in the UTC Library and in other libraries across the nation.

The goals of the UTC Library's Reference Department are:

1. to acquire reference materials related to the educational and informational needs and interests of the faculty, staff, and students of the University of Tennessee at Chattanooga;

2. to organize these materials in a comprehensible and accessible fashion;

3. to make these materials easily available to library users, all in a safe and physically attractive environment;

4. to facilitate access to all library materials and to the informational content of those materials through direct personal service to library users by available, trained, and capable staff;

5. to facilitate access to materials and information services outside the UTC Library;

6. to provide both formal and informal bibliographic and library instructional opportunities for the students, faculty, and staff of the University of Tennessee at Chattanooga; and

7. to insure adequate time for faculty development in the areas of library reference services, bibliographic tools, and library instructional techniques in order to maintain a high quality of reference service.

Working within the framework of these goals, reference librarians at UTC provide timely information and quality instruction to a broad spectrum of library users. In addition to providing the more traditional reference services, reference librarians are also responsible for an increasing number of automated reference services, including accessing and, in some cases, training users to access, a variety of electronic databases. Such databases include the online catalogs of other universities; the online databases available from commercial vendors; and an assortment of electronic databases available on optical disc and housed in the library.

End-user Access to Online Library Catalogs

Reference librarians at UTC regularly access three online library catalogs via connections to various campus computer networks. These online catalogs include the:

1. UT Chattanooga Online Catalog (VTLS)
2. UT Knoxville Online Catalog (Geac)
3. Vanderbilt University Online Catalog (NOTIS)

Reference librarians have prepared various instructional materials in order to teach UTC students, faculty, and staff how to access and then use the UTC and UTK catalogs via the campus network. Librarians expect this role to expand as more catalogs become available through the campus network's connections to other networks, such as BITNET and INTERNET. Future plans include the possibility of providing access to OCLC's new online system (Prism) via the campus network.

Mediated Access to Electronic Databases

At UTC a computer search is defined simply as library research which is performed for an individual by a librarian using a computer. Such mediated searches may involve a librarian searching an electronic database online or a database stored locally on CD-ROM (Compact Disc-Read Only Memory). Reference librarians at UTC have regularly searched the computer databases operated by DIALOG Information Services since 1986. Mediated searches of CD-ROM databases began in 1989. Reference librarians access Dialog Information Services by using microcomputers which are connected to the UTC campus network. Librarians request a modem from the campus network and then dial the local TELENET number in order to connect to Dialog. Computer searches usually result in a printed list of items about a particular topic of interest. The items listed are usually journal articles, but other types of materials can be listed as well. Individuals at UTC usually receive these printed lists within two days of the initial request. Computer searches

can save time and effort by an individual, but with a price. Computer searches are available to the faculty, staff, and students of the University of Tennessee at Chattanooga who are willing to assume the cost of the service and who are able to schedule an appoinment with a reference librarian.

Computer searches at UTC usually cost between $10 and $25, but costs can vary according to which databases are searched, the amount of computer time used, and the number of citations printed. Mediated searches of databases on CD-ROM are priced at a flat rate, depending only upon the number of citations printed. Librarians provide the requestor with an estimate of the costs prior to the search and then make every effort to keep the costs of the search under this estimate. Payment is required prior to receipt of any printout and may be made by cash, check (payable to UTC), or UTC departmental charge. If a faculty member charges a search to a department and the department refuses to pay, then the faculty member is responsible for all charges. Students who refuse to pay are prevented from registering for classes, receiving grades or transcripts, and graduating. No refunds are given for unsatisfactory computer searches resulting from circumstances beyond the library's control.

Individuals must make an appointment with a librarian before a computer search will be performed. Librarians are available to perform computer searches from 8:00 am - 5:00 pm, Monday - Friday. Appointments can usually be arranged within 24 to 48 hours. To make an appointment, an individual must call the Reference Department or complete a *Computer Search Request* form and give it to the librarian at the Reference Counter. This form is printed on the reverse side of a library handout entitled, *How to Prepare for a Computer Search.* Submission of the signed *Computer Search Request* form commits the requestor to payment of all charges and fees for this service. Individuals are encouraged to plan well in advance of need, so that unforeseen delays will not cause difficulties.

Each request for a computer search is referred to an appropriate librarian who may contact the individual making the request in order to discuss specifics of the search, possible keywords, appropriate databases, search limitations, costs, etc. The librarian advises the requestor when comparable results can be obtained from printed versions of indexes and abstracts.

End-user Access to In-house CD-ROM Databases

Until recently, individuals wanting to search electronic databases at UTC were required to work with specially trained librarians and to assume any computer and telecommunication costs from the information vendor. However, recent advances in optical storage technologies, such as CD-ROM, and the evolution of sophisticated microcomputer software have promised to eliminate at least some of the need for intermediaries, as well as the high costs to individual users. In a 1988 campus survey, a significant number of UTC faculty (79%) expressed a need for end-user searching capability, i.e., the capability to search electronic databases themselves. In response to the need expressed by the faculty, the UTC Library recently established an experimental Automated Reference Center (ARC) immediately adjacent to the library's reference counter. The ARC serves as a self-help, end-user computer search facility which offers UTC faculty members access to a variety of electronic databases on CD-ROM through a number of microcomputer workstations.

Faculty members are encouraged to complete a brief training program in database search techniques prior to using the ARC. The Coordinator of Library Instruction is responsible for planning and scheduling such training sessions, as well as for developing any appropriate self-help materials to be used with the databases. The Coordinator may call upon other librarians (according to their particular interests and areas of expertise) for assistance with teaching the sessions or with developing instructional materials. Training sessions are scheduled regularly throughout each term in order to meet the anticipated demand. Training sessions are normally held in one of the library's classrooms which is

equipped with special computer projection equipment. Individual assistance in the use of the equipment and the software must be scheduled in advance due to the current level of staffing in the Reference Department. The library does not provide individual assistance on demand.

The UTC Library currently subscribes to a few, select databases in the CD-ROM format. CD-ROM databases are selected to meet the faculty's research interests in terms of subject matter, scope, and availability. These compact discs are housed behind the reference counter on Reference Reserve. Reservations for use of the discs are accepted up to one week in advance of use. Each database and the associated equipment may be used for up to one hour by an individual faculty member. Each faculty member must leave his or her valid university i.d. card and sign a log sheet at the reference counter each time he or she wishes to use the ARC. Each faculty member is reminded to return any borrowed disc(s) to the reference counter and retrieve his or her i.d. card as soon as searching has been completed. The databases on CD-ROM which the library currently lease include:

1. Books in Print Plus Reviews (Bowker)
2. Compendex (Dialog Ondisc)
3. Dissertations Abstracts International (UMI)
4. ERIC (Dialog Ondisc)
5. Medline Clinical Collection (Dialog Ondisc)
6. PsycLit (SilverPlatter)

The Consequences of the Reference Evolution

Since 1984, the Reference Department has experienced significant increases in many of its service categories, most notably the number of library instruction classes taught (up 38%) and the number of mediated computer searches conducted (up 4,288%). The evolution of automated reference services has directly impacted the duties and responsibilities of every staff member in the library's Reference Department. Reference staff members must

continuously learn and implement new technologies, new methods of instruction, and new approaches to information service. Department staff members have assumed new roles and new responsibilities.

Personnel from the UTC Reference Department are now responsible for the operation and routine maintenance of a wide array of equipment located in the Reference area. Routine maintenance includes switching equipment on and off each day, maintaining paper in printers, cleaning and inspecting equipment each week, and reporting any problems with the equipment or software to the appropriate person(s). Computer and related equipment which Reference librarians currently operate and maintain include:

1. Hewlett-Packard Computer Terminals (HP700/92)
2. Hewlett-Packard Thinkjet Printers (HP2225D)
3. Hitachi CD-ROM disc drives (CDR-1503S)
4. IBM Microcomputers (PS2/30-286 and PS2/55SX)
5. IBM Mouse Devices
6. IBM Printers (Proprinter II & III)
7. Kurzweil Personal Reader for the Blind
8. Sharp Computer Panel Projectors
9. UltraTec Telephone Device for the Deaf

Reference librarians are also responsible for loading new versions of microcomputer software and for maintaining an appropriate and efficient hard disk configuration for each of their microcomputers. Computer software which reference librarians currently use includes:

1. AutoMenus Software
2. DOS (Version 4.01)
3. Microsoft Windows Software
4. Microsoft Word for Windows Software

5. Norton Commander DOS Utility Software
6. PCMagazine Utilities
7. PC Tools DOS Utility Software
8. Terminal Emulation Software
9. WordPerfect Software (Optional)

Reference librarians must also familiarize themselves with a variety of networks and network operations. Computer networks which Reference librarians currently access include:

1. UT Chattanooga campus network
2. UT Knoxville campus network
3. BITNET for interuniversity electronic mail (Optional)
4. TELENET for Dialog Information Services

Most of the responsibilities listed above were not required of the reference staff even three years ago. The library has been forced by the rapidly changing circumstances to rewrite existing job descriptions, to rethink its requirements for vacant positions, and to mount an extensive in-house training effort in order to develop new skills for its existing staff. Of these efforts, staff training has proved to be the most time-consuming. The library's restructured staff development efforts have attempted to draw upon resources from both the library and the campus in order to develop the technological skills required for the staff's new roles. The library has also been hard-pressed to keep salaries commensurate with the experience which it's positions now require.

The reference staff realize that this evolution will never be complete. The technological possibilities will change and the library's clientel will change in both its level of understanding and its expectations. Reference services will continue to evolve rapidly and job responsibilities will continue to change appropriately. Policies and procedures will continue to be reviewed and revised. Issues already addressed will be addressed again and

again. Indeed, this process of rapid, continuous change has already become a fact of life at UTC. The UTC reference staff continue to discuss which databases should be purchased in paper and which should be leased in an electronic format; which databases should be leased in CD-ROM and which should be accessed online on a per use basis; which subscriptions to databases on CD-ROM should be continued and which should be cancelled; and whether CD-ROM databases are appropriate for end-user searching by undergraduates considering the Library's fiscal and staff resources.